

Clinton WALLER Jr. et al.

Serial No.: 08/892,902

Filed: 14 July 1997

For: MICROPOROUS INKJET RECEPTORS CONTAINING BOTH A PIGMENT MANAGEMENT SYSTEM
& A FLUID MANAGEMENT SYSTEM

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cont'd

a porous substrate having a fluid management system and a pigment management system in contact with surfaces of pores of the substrate wherein the pigment management system comprises a functionalized coating along the surfaces of the porous substrate, and wherein the fluid management system comprises a surfactant that carries away an ink passing through the substrate except for pigment particles in the ink.

23. (New) The medium of claim 1, wherein the functionalized particulates comprise fluorinated particulates.

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24. (New) An inkjet receptor medium comprising:

a porous substrate having a fluid management system and a pigment management system in contact with surfaces of pores of the substrate wherein the pigment management system comprises fluorinated silica agglomerates that are capable of agglomerating pigment particles in a pigment-containing ink used to print the inkjet receptor medium.

Remarks

Claims 2-3, 6-9, 17, and 20 having been canceled, claims 1, 4-5, 10, 12, 14-16, and 18 having been amended, and claims 21-24 having been added, the pending claims in the above-identified patent application are claims 1, 4-5, 10-16, 18-19, and 21-24. Reconsideration and withdrawal of the rejections of the claims in light of the preceding amendments and following remarks are respectfully requested.

Support for the amendment to claims 1, 16, 18 and for new claim 22 can be found, for example, in the originally filed claims, particularly claims 2, 3, and 8. Notably, the Examiner indicated that claim 8 is free of any prior art rejections.

Support for the amendment to claim 11 and for new claim 21 can be found, for example at page 10, lines 20-23.

Claim 14 has been amended and no longer recites the term "long-chain."

Claims 4-5, 10, 12, and 15 have been amended to indicate proper dependency.

Additional support for the amendments to claim 15 can be found, for example, at page 16, line 12.

Support for new claim 23 can be found, for example, at page 15, lines 1-7.

New claim 24 recites claim language the Examiner has indicated as free of any art references. Support for claim 24 can be found in the originally filed claims, particularly claims 1 and 5.

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Applicants' note the Examiner's remarks regarding the drawings as filed. Upon Notice of Allowance, Applicants will submit formal drawings.

No new matter has been added.

The Rejection under 35 U.S.C. §112, first paragraph

Claims 1, 6, 7, 10, 11, and 18 were rejected under 35 U.S.C. §112, first paragraph. The Office Action alleges that the specification "does not reasonably provide enablement for an ink receptor medium having a pigment management system, in general." Claims 1, 10-11, and 18 having been directly amended, claims 6 and 7 having been canceled, the current rejection is no longer applicable.

Independent claim 1 now recites that a porous substrate, according to the claimed invention, has a fluid management system and a pigment management system in contact with surfaces of pores of the substrate wherein the pigment management system contains functionalized particulates within the pores of the porous substrate or a functionalized coating along the surfaces of the pores of the porous substrate, and wherein the fluid management system contains a surfactant that carries away an ink passing through the substrate except for pigment particles in the ink.

Withdrawal of the rejection under 35 U.S.C. §112, first paragraph, is respectfully requested.

The Rejections under 35 U.S.C. §112, second paragraph

Claims 2-5 and 7-20 were rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite. The rejection, as it relates to the amended claims, is respectfully traversed.

1. Although Applicants do not agree with this rejection, claim 2 has been canceled in the interest of expediting prosecution. Therefore the current rejection is moot.

2. Claims 7-9 have been canceled, independent claim 1 and dependent claim 12 have been amended to incorporate the language objected to by the Examiner. It is respectfully submitted that this language is clear as it defines the type of surfactant that can be incorporated into the medium.

3. Claim 10 has been amended. As amended, claim 10 depends from new claim 21, which recites that the inkjet receptor medium according to claim 1, wherein the porous substrate comprises a microporous membrane. The current rejection is therefore no longer applicable.



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4. The Examiner asserted that the scope of a long-chain fatty acid, as recited in claim 14, is not clear, as the term "long" is indefinite. Applicants maintain the term "long" as it applies to a fatty acid, is definite in view of the claims, the specification, and as would be understood by one of skill in the art. Examples of well known long chain fatty acids in the art include, palmitic acid, stearic acid, linoleic acid, and arachidonic acid. However, in the interest of expediting prosecution, "long-chain" has been deleted from claim 14.

5. Claim 15 has been amended. The claim no longer recites "the" salts. Accordingly, the current rejection is no longer applicable.

6. The Examiner asserted that the scope of "pseudo-halides" is not known. This rejection is respectfully traversed. Applicants maintain the term "pseudo-halides" is definite in view of the claims, the specification, and as would be understood by one of skill in the art. Known pseudo-halides include, for example, cyanide, azide, cyanate, thiocyanate, selenocyanate, tellurocyanate, and azidothiocarbonate. (See, for example, William W. Porterfield, Inorganic Chemistry, (Addison-Wesley Publ., 1984), page 133 (provided)). All that is required by the second paragraph of section 112 is that the claims set out and circumscribe a particular area that the Applicant regards as the invention with a reasonable degree of precision and particularity. Applicants have readily defined this particular area, i.e., pseudo-halides, such that one of skill in the art would understand all the claim language when read in light of the specification and it is as precise as the subject matter requires.

7. Claim 16 has been amended. Claim 16 now recites that the pigment management system "once imbibed into the pores" comprises functionalized particulates within the pores of the porous substrate or a functionalized coating along the surfaces of the pores of the porous substrate. Accordingly, the current rejections are no longer applicable.

8. Claim 17 has been canceled, therefore the current rejection is moot.

9. Claim 18 has been amended. Accordingly, the current rejection is no longer applicable.

Withdrawal of the rejections under 35 U.S.C. §112, second paragraph is respectfully requested.

The Rejection under 35 U.S.C. 102(b)

Claims 1, 3-4, 6-7, 9, 15-18, and 20 were rejected under 35 U.S.C. 102(b) as alleged anticipated by Cousin et al. (U.S. Patent No. 4,554,181). Independent claims 1, 16, and 18 having been amended to incorporate the language of claim 8 which was free of any prior art

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rejections, this rejection is rendered moot. Insofar as the rejection may apply to the presently pending claims and new claims 21-24, the rejection is respectfully traversed.

Cousin et al. relate to an ink jet recoding sheet having a bi-component cationic recording surface. The ink jet recording sheet includes a combination of a water soluble polyvalent metal salt and a cationic polymer wherein the polymer contains cationic groups which are available for ionically interacting with an anionic dye and insolubilizing it (column 2, lines 39-44). The metal salt is typically a water soluble salt of polyvalent cations from Group II, Group III, or the Transition Metals of the Periodic Table of elements (column 5, lines 46-49).

In contrast to Cousin et al., independent claim 1 is directed to an inkjet receptor medium having a porous substrate containing a fluid management system and a pigment management system in contact with surfaces of pores of the substrate wherein the pigment management system contains functionalized particulates within the pores of the porous substrate or a functionalized coating along the surfaces of the pores of the porous substrate, and wherein the fluid management system contains a surfactant that carries away an ink passing through the substrate except for pigment particles in the ink. Claims 16 and 18 are directed to a method of making and using an inkjet receptor medium, respectively, employing an inkjet receptor medium as described above.

It is well recognized that to anticipate a claim for a patent, a cited document must contain all the elements of that claim. As Cousin et al. do not disclose or suggest an inkjet receptor medium or a method of making and using an inkjet receptor medium as recited in the pending claims, the document does not contain all the elements recited by the claims and therefore does not anticipate these claims. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b), is respectfully requested.

The Rejection under 35 U.S.C. 102(e)

Claims 1, 3-4, 6, 16, 18, and 20 were rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al. (U.S. Pat. 5,695,820). Independent claims 1, 16, and 18 having been amended to incorporate the language of claim 8 which was free of any prior art rejections, this rejection is rendered moot. Insofar as the rejection may apply to the presently pending claims and new claims 21-24, the rejection is respectfully traversed.

Davis et al. relate to a method for alleviating flow-induced print defects in ink-jet printing (column 1, lines 6-10). The method includes layering the desired or primary ink-jet ink with at



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least one treating solution capable of causing a colorant in the primary ink-jet ink to precipitate (column 2, lines 61-65). A typical precipitating agent is a multi-valent metal salt (column 3, line 66 bridging to column 4, lines 1).

In contrast to Davis et al., independent claim 1 is directed to inkjet receptor medium having a porous substrate containing a fluid management system and a pigment management system in contact with surfaces of pores of the substrate wherein the pigment management system contains functionalized particulates within the pores of the porous substrate or a functionalized coating along the surfaces of the pores of the porous substrate, and wherein the fluid management system contains a surfactant that carries away an ink passing through the substrate except for pigment particles in the ink. Claims 16 and 18 are directed to a method of making and using an inkjet receptor medium, respectively employing an inkjet receptor medium as described above.


It is well recognized that to anticipate a claim for a patent, a cited document must contain all the elements of that claim. As Davis et al. do not disclose or suggest an inkjet receptor medium or a method of making and using an inkjet receptor medium as recited in the pending claims, the document does not contain all the elements recited by the claims and therefore does not anticipate these claims. Accordingly, withdrawal of the rejection under 35 U.S.C. §102(b), is respectfully requested.

The Rejection under 35 U.S.C. 103(a)

Claims 10-14, 18, and 20 were rejected under 35 U.S.C. 103(a) as allegedly obvious in view of Cousin et al. (U.S. Pat. 4,554,181). Independent claims 1, 16, and 18 having been amended to incorporate the language of claim 8 which was free of any prior art rejections, this rejection is rendered moot. Insofar as the rejection may apply to the presently pending claims and new claims 21-24, the rejection is respectfully traversed.

Cousin et al., discussed above, relate to an ink jet recoding sheet having a bi-component cationic recording surface. The ink jet recording sheet includes a combination of a water soluble polyvalent metal salt and a cationic polymer.

As Cousin et al. do not teach or suggest an inkjet receptor medium as recited by independent claim 1, as amended, Cousin et al. do not teach or suggest the subject matter as recited in the dependent claims. Accordingly, withdrawal of the rejection under 35 U.S.C. §103(a), is respectfully requested.



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Summary

It is respectfully submitted that each of the pending claims 1, 4-5, 10-16, 18-19, and 21-24 is in condition for allowance, and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted,

WALLER et al.,

By their Representatives,
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AMM/pbs/kjm

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